

CONTENTS

JANUARY

VOLUME 69, NUMBER 1

1989

CONTENTS

General Papers

- V. S. Lutovinov and O. E. Molodykh 1 The influence of electron-electron interaction on the temperature dependence of the magnon damping in disordered ferromagnetic metals
- T. Tsuzuki 7 On the dynamics of a two-state system coupled to a bosonic bath
- M. Lagos 11 Non-Condon contributions to the diffusion of hydrogen in solid solutions

Superconductors and Superconductivity

- J. Chadwick, G. R. Court and D. H. Jones 19 Magnetic measurements on high- T_c superconductors
- P. Vašek, L. Smrčka, J. Dominec, M. Pešek, O. Smrčková and D. Sýkorová 23 Gamma irradiation of $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ ceramics
- P. A. P. Lindberg, Z.-X. Shen, J. Hwang, C. K. Shih, I. Lindau, W. E. Spicer, D. B. Mitzi and A. Kapitulnik 27 Electronic structure of the $\text{La}_{1+x}\text{Ba}_{2-x}\text{Cu}_3\text{O}_{7+\delta}$ system studied by photoelectron spectroscopy

General Papers (contd)

- K. Suzuki, J. Watanabe, A. Takeuchi, Y. Uehara and S. Ushioda 35 Two-mode radiation from light-emitting tunnel junctions with surface roughness
- T. Tomov, H. Engelmann, I. Dézsi and U. Gonser 41 Investigation of the ferroelectric phase transition in $\text{LiNbO}_3\text{:Fe}$ by Mössbauer spectroscopy
- M. Nikl 45 Energy transfer in $\text{PbCl}_2\text{:Sn}^{2+}$ single crystals at low temperatures
- C. Paracchini and V. Dallacasa 49 Impact ionization current in semi-insulating GaAs
- W. Ungier 53 Electron-hole exchange interaction in a biexciton molecule
- S. K. Misra and S. Jerzak 57 Mn^{2+} EPR study of phase transitions in dicalcium barium propionate $\text{Ca}_2\text{Ba}(\text{C}_2\text{H}_3\text{COO})_6$
- K. Fujiwara, N. Tsukada, T. Nakayama and T. Nishino 63 Linear polarization effects on photoluminescence properties of GaAs/AlAs quantum well heterostructures
- F. Rodríguez, M. Moreno, J. M. Dance and A. Tressaud 67 Temperature dependence of crystal-field peaks of RbMnF_3 and KMnF_3

- | | |
|--|--|
| K. Beck, U. Bogner and M. Maier | 73 Heat-pulse propagation in polymers detected by selectively laser-excited dye molecules |
| K. M. Hong | 79 Scattering of electrons by a rough surface |
| C. Meyer, J. P. Gavigan, G. Czjzek and H.-J. Bornemann | 83 A study of crystal fields in $\text{Yb}_2\text{Fe}_{14}\text{B}$ by ^{174}Yb Mössbauer spectroscopy |
| J. W. Krewer and R. Feder | 87 Non-spherical potentials in relativistic multiple scattering theory |
| T. Kaneyoshi | 91 On the magnetic behavior of amorphous spinel ferrites |
| W. Kleemann and F. J. Schäfer | 95 Single-to-multiaxis antiferromagnetic phase transition in $\alpha\text{-MnS}$? |
| P. Saalfrank, P. Otto and J. Ladik | 99 <i>Ab initio</i> Hartree-Fock band structures of different lead surfaces using effective potentials |
| M. Bleher and W. Wonneberger | 103 Self consistent collective mode response and pinning frequencies in charge density wave systems |
| S. N. Kumar | 107 Effective medium treatment of multicomponent metal-dielectric systems |
| S. P. McAlister, M. Olivier and T. Siegrist | 113 Magnetic and electrical properties of UCu_2Ge_2 |
| K. Solomon Harshavardhan and M. S. Hegde | 117 On photooxidation of Ge in obliquely deposited Ge and $\text{Ge}_{25}\text{X}_{75}$ ($\text{X} = \text{S}, \text{Se}, \text{Te}$) thin films |
| | i Instructions for Authors on the Preparation of Camera-Ready Manuscripts for <i>Solid State Communications</i> |

A cumulative Author Index appears in Numbers 4, 8 and 12 of each Volume

JANUARY

VOLUME 69, NUMBER 2

1989

CONTENTS

General Papers

- | | |
|--|--|
| B. Dorner, I. T. Belash,
E. L. Bokhenkov, E. G. Ponyatovsky,
V. E. Antonov and L. N. Pronina | 121 Inelastic incoherent neutron scattering spectra from fcc $\text{NiH}_{1.05}$, hcp $\text{CrH}_{1.0}$ and hcp $\text{MoH}_{1.2}$ at 15K |
| A. J. Rostocki and R. Wiśniewski | 125 An effect of pressure forced transition from ferro- to nonferromagnetic state in amorphous alloy $\text{Fe}_{60}\text{Mn}_{20}\text{B}_{20}$ |
| Wang Xue-mei, Lu Li, Duan Hong-min,
B. J. Jin and Zhang Dian-lin | 127 Peierls transition study of $\text{K}_{0.3}\text{MoO}_3$ by the measurements of the pressure dependence of resistivity and thermopower |
| M. R. Ibarra, C. Marquina,
P. A. Algarabel, J. I. Arnaudas and
A. del Moral | 131 A. C. initial magnetic susceptibility and spin reorientation transitions in $(\text{Er}_x\text{R}_{1-x})_2\text{Fe}_{14}\text{B}$ magnets ($\text{R} = \text{Nd}$ and Dy) |
| A. Anastassiadou, E. Liarokapis and
E. Anastassakis | 137 A Raman study of $\text{Zn}_{1-x}\text{Mn}_x\text{S}$ mixed crystals |
| K. Yoshino, Y. Manda, K. Sawada,
M. Onoda and R. Sugimoto | 143 Anomalous dependences of luminescence of poly(3-alkylthiophene) on temperature and alkyl chain length |
| W. Blau, R. Dudde and H. Petersen | 147 Photoyield measurements of the boron K-edge fine structure of amorphous $\text{Fe}_{80}\text{B}_{20}$ alloys |

A. Tempel and A. Zehe	151 Strain field and angular misalignment in pseudomorphic epitaxial systems with Si (1 1 1) substrates
Luo Ningsheng, Xu Wenlan and S. C. Shen	155 Embedded atom method for the phonon frequencies of copper in off-symmetry directions
A. Uddin, H. Nakata and E. Otsuka	159 High density hot excitons in stressed pure silicon
D. Wolverson and R. T. Phillips	163 Time-resolved photoluminescence in amorphous P ₂ Se
P. Monachesi, P. Giannozzi and M. Acquarone	167 Relationship between electronic conduction states and indirect magnetic exchange
H. Schweitzer and G. Czycholl	171 Second order U-perturbation approach to the Anderson lattice model in high dimensions
<hr/>	
Superconductors and Superconductivity	
Sui-Geng Jin, Lin-Gmei Liu, Zheng-Zhong Zhu and Yun-Lian Huang	179 Water reaction of superconducting YBa ₂ Cu ₃ O ₇ at 0°C and its protection from water corrosion at 100°C
W. Herkert, H.-W. Neumueller and M. Wilhelm	183 Preparation and magnetic properties of high T _c (110 K) Bi-Sr-Ca-Cu-oxide superconductors
Jing Zhao, K.-H. Dahmen, H. O. Marcy, L. M. Tonge, B. W. Wessels, T. J. Marks and C. R. Kannewurf	187 Low pressure organometallic chemical vapor deposition of high-T _c superconducting YBa ₂ Cu ₃ O _{7-δ} films
A. Winiarski, A. Winiarska and A. Chelkowski	191 X-ray diffraction and resistivity studies of REBa ₂ Cu ₃ O _{6+x} (RE — Y or rare earth metal)
Y. Tanaka and M. Tsukada	195 Many-band theory of superconductivity in the Kronig-Penny model based on rigorous Green's function

A cumulative Author Index appears in Numbers 4, 8 and 12 of each Volume

JANUARY

VOLUME 69, NUMBER 3

1989

CONTENTS

General Papers

Yang Zhen and Cheng Yu-fen	201 Neutron diffraction intensity enhancement of α-LiIO ₃ single crystal under DC voltage at elevated temperatures
B. P. Zakharchenya, P. S. Kop'ev, D. N. Mirlin, D. G. Polakov, I. I. Reshina, V. F. Sapega and A. A. Sirenko	203 Optical alignment of 2D-electron momenta in multiple quantum well structures

Superconductors and Superconductivity

M. Krantz, H. J. Rosen, R. M. Macfarlane, W. Y. Lee, V. Y. Lee and R. Savoy	209 Raman microprobe study of a superconducting (T _c = 120K) Tl ₂ Ca ₂ Ba ₂ Cu ₃ O ₁₀ thin film
A. K. Rajarajan, K. V. Gopalakrishnan, R. Vijayaraghavan and L. C. Gupta	213 Nuclear magnetic resonance studies of thallium in a superconducting phase of the Tl-Ba-Ca-Cu-O system
C. Y. Fong, M. S. Wartak and R. N. Shelton	219 The effect of structural difference on critical temperature in La _{2-x} Ba _x CuO ₄ and YBa ₂ Cu ₃ O _{7-x}
Z. Hiroi, M. Takano and Y. Bando	223 Oxygen ordering model describing the two-phase microstructures in YBa ₂ Cu ₃ O _{6+c}

D. M. Eagles	229	Concentrations and mobilities of holes and electrons in a crystal of a 90K oxide superconductor from analysis of <i>ab</i> -plane resistivity and Hall data
P. Prieto, G. Zorn, R. R. Arons, S. Thierfeldt, M. E. Gomez, B. Kabius, W. Sybertz and K. Urban	235	Formation of highly textured Bi-Sr-Ca-Cu-O superconducting thick films by a rapid melting process
Y. H. Huo and J. Yan	241	The response of unbiased bridge of YBaCuO superconducting bulk to microwave radiation
H. Feil	245	Intervalence charge transfer transitions in superconductors and related compounds
G. Linker, X. X. Xi, O. Meyer, Q. Li and J. Geerk	249	Control of growth direction of epitaxial YBaCuO thin films on SrTiO ₃ -substrates
R. Fazio, G. Falci and G. Giaquinta	255	Phase dependent renormalization in granular superconductors
L. B. Kiss	259	A (high <i>T_c</i>) superconductor sample arrangement of bistable nature
C. J. Howard, R. J. Nelmes and C. Vettier	261	A neutron powder diffraction study of the effect of pressure on the crystal structure of La ₂ CuO ₄
<hr/>		
General Papers (cont)		
R. Jakubas	267	A new ferroelectric compound: (CH ₃ NH ₃) ₃ Bi ₂ Br ₁₁
S. Palchoudhuri and G. K. Bichile	271	Dielectric and electrical conductivity studies in β -PbF ₂
J. S. Baijal, D. Kothari, S. Phanjoubam and C. Prakash	277	Hyperfine interaction and cation distribution of the system Ni _{1-x} Sn _x Fe _{2-2x} O ₄
J. T. Lopez Navarrete and G. Zerbi	281	Charge localisation in doped segmented polyacetylene
G. Haley, J. G. Mullen and J. M. Honig	285	First order change in hyperfine interaction at the Verwey transition in magnetite
H. Braeter, N. M. Plakida and W. Windsch	289	On the pressure dependence of the phase transition temperature in hydrogen-bonded ferroelectrics
J. S. Lee, N. Miura and Y. Iwasa	293	Magnetic field effect on the Stokes shift in <i>p</i> -type modulation-doped quantum wells
A. Kabasi and D. Chattopadhyay	297	Alloy scattering and electronic transport in InGaAs/InP single quantum wells
K. N. Shrivastava	301	The phonon-fracton crossover from the spin-lattice relaxation of Fe ³⁺ in frozen solutions of metmyoglobin azide
C. Pennetta	305	A total-energy study of proton diffusion in crystalline silicon
J. Leng, Y. Qian, P. Chen and A. Madhukar	311	Disorder activated optical modes and the phonon dispersion of Al _x Ga _{1-x} As lattice vibration
F. Cannata, L. Ferrari and G. Russo	317	Correlation energy in double polarons from factorization of centre of mass and relative motion
N. C. Constantinou and M. G. Cottam	321	Theory of Raman scattering from plasmon-polaritons in a superlattice of alternating layered electron gases
S. K. Misra and S. Jerzak	325	Mn ²⁺ EPR study of phase transitions in dicalcium strontium propionate Ca ₂ Sr(C ₂ H ₃ COO) ₆

- M. Seidl and M. Maier 333 Relaxation of the $a^1\Delta_g$ state of solid γ and β natural O_2 and $^{18}O_2$
- K. Mazuruk, M. Benzaquen and D. Walsh 337 Coulomb gap and screening in impurity bands
- i Corrigenda
- ii Errata

A cumulative Author Index appears in Numbers 4, 8 and 12 of each Volume

JANUARY

VOLUME 69, NUMBER 4

1989

CONTENTS

General Papers

- R. Plumier and M. Sougi 341 Magnetic ordering in the normal spinel $Cu_{0.5}In_{0.5}Cr_2Se_4$
- U. Caldiño G., C. de la Cruz, G. Muñoz H. and J. Rubio O. 347 $Ce^{3+} \rightarrow Eu^{2+}$ energy transfer in CaF_2

Superconductors and Superconductivity

- R. Decca, E. Osquiguil, F. de la Cruz, C. D'Ovidio, M. T. Malachevski and D. Esparza 355 Non linear temperature dependence of the resistivity of $La-Sr-Cu-O$: effects of Sr content
- P. Echegut, F. Gervais, K. Dembinsky, M. Gervais and P. Odier 359 Polar phonon modes in $YBa_2Cu_3O_{6.4}$ by infrared reflectivity spectroscopy
- W. Markowitsch, W. Lang, N. S. Sarıci̇ftci and G. Leising 363 Plasma reflection of polycrystalline $YBa_2Cu_3O_{7-x}$
- S. D. Murphy, K. Renouard, R. Crittenden and S. M. Bhagat 367 AC susceptibility of sintered high T_c superconductors — Bean's model and shielding current
- N. Yu Boldyrev, V. M. Burlakov, A. I. Golovashkin, Yu. A. Khadzhinskii, K. V. Kraiskaya, S. I. Krasnosvobodtsev, I. V. Lerner, A. G. Mit'ko, E. V. Pechen and G. N. Zhizhin 373 Spectroscopy of energy gap in ceramics and oriented films of $YBa_2Cu_3O_7$ in the regime of negative light fluxes
- Chan-Soo Jee, A. Kebede, D. Nichols, J. E. Crow, T. Mihalisin, G. H. Myer, I. Perez, R. E. Salomon and P. Schlottmann 379 Depression of superconductivity, heavy fermion behavior and valence fluctuations in $Y_{1-x}Pr_xBa_2Cu_3O_7$
- N. I. Agladze, M. N. Popova and E. P. Hlybov 385 Optical spectra of high T_c superconductor $Er-Ba-Cu-O$ in the region of $^4I_{15/2} - ^4I_{13/2}$ transition in Er^{3+} ion
- S. L. Bud'ko, A. G. Gapotchenko and E. S. Itskevich 387 Effect of pressure on critical fields and T_c of $La_{1.8}Sr_{0.2}CuO_4$ and $YBa_2Cu_3O_7$ high- T_c ceramics

General Papers (contd)

- V. I. Yukalov 393 Mössbauer-effect probability for heterogeneous matters
- G. Eliasson, P. Hawrylak, X. Zhu, X. Xia and J. J. Quinn 397 Bulk and surface collective excitations of electron hole plasma in semiconductor superlattices with zero valence band offset
- U. Mizutani, M. Hasegawa and S. Ohashi 403 Enhanced itinerant paramagnetism in C14-type Laves $Ti(Cu_{1-x}Al_x)_2$ ($0.45 \leq x \leq 0.70$) alloys
- V. K. Jain and V. S. Yadav 407 Estimation of T_1 for Co^{2+} ions from temperature variation of the EPR linewidths for Mn^{2+} in $Na_2Co(SO_4)_2 \cdot 4H_2O$ single crystals

- | | |
|---|---|
| U. V. Desnica | 411 Factors influencing site selection of dopants in binary semiconductors |
| K. Kanoda, T. Takahashi, K. Kikuchi,
K. Saito, Y. Honda, I. Ikemoto, K. Kobayashi,
K. Murata and H. Anzai | 415 Anomalous spin dynamics of conduction electrons in the organic conductor, [dimethyl(ethylenedithio)diselenadithiafulvalene] ₂ AuBr ₂ [(DMET) ₂ AuBr ₂] |
| E. Pehlke and W. Schattke | 419 Calculation of photoemission spectra for the layered crystal 1T-titanium diselenide |
| H. Yamamoto, K. Seki, T. Enoki and
H. Inokuchi | 425 Ultraviolet photoemission spectroscopy of ternary graphite intercalation compound C ₈ KH _x |
| Y. Nakaoka and T. Higashimura | 431 Energy competition of self-trapped excitons in alkali halides |
| M. Saint Jean, C. Rigaux, J. Blinowski,
G. Furdin, E. McRae and J. F. Mareche | 435 Frequency dependence of the c-axis conductivity in C ₈ AsF ₆ |
| V. Contini, C. Presilla and F. Sacchetti | 439 On the temperature dependence of the LVV Auger spectrum in vanadium |
| A. A. S. Sangachin and J. Shanker | 443 Analysis of compression for cuprous, silver and thalious halides |

i Author Index Nos 1-4

A cumulative Author Index appears in Numbers 4, 8 and 12 of each Volume

FEBRUARY

VOLUME 69, NUMBER 5

1989

CONTENTS

General Papers

- | | |
|--|--|
| I. Kokanović, B. Leontić and J. Lukatela | 447 Evidence for electron-electron interaction and localization effects in the magnetic susceptibility of hydrogen-doped Zr-Ni metallic glass |
| D. Scalbert, J. Cernogora, A. Mauger,
C. Benoit à la Guillaume and A. Mycielski | 453 Resonant Raman scattering on low energy excited states of Fe ³⁺ in Cd _{1-x} Fe _x Se |
| A. Borghesi, M. Geddo, G. Guizzetti,
S. Pizzini, D. Narducci, A. Sandrinelli and
G. Zachmann | 457 Infrared microcharacterization of grain boundaries in polycrystalline silicon |
| G. A. R. Lima, M. R. Sardela Jr., A. Fazzio
and R. Mota | 461 The Cr ²⁺ luminescence in GaAs as a function of hydrostatic pressure |
| E. K. Hlil, M. H. Tuilier, R. Riedinger,
B. Lloret, B. Chevalier, B. Buffat and
J. Etourneau | 465 Cerium valence and physical properties of Ce(Rh _{1-x} M _x) ₂ Si ₂ solid solutions with M = Co, Ru |
| D. F. Mariani, J. Vignolo and
M. Jiménez de Castro | 471 Thermal annealing of the effect of plastic deformation on the thermoluminescence of KBr |
| D. Malterre | 475 Influence of density of conduction states on the electronic configuration of cerium |
| M. I. Alonso, M. Cardona and G. Kanellis | 479 Space groups and lattice dynamics of Ge/Si superlattices grown in the [001] direction |
| H. Ebert, B. Drittler, R. Zeller and G. Schütz | 485 A first-principles description for the magnetic X-ray dichroism of Pt in Fe |

Superconductors and Superconductivity

- Y. Tanaka and M. Tsukada 491 Superconductivity of Kronig - Penny superlattice model
- A. G. Gukasov, V. P. Plakhty, O. P. Smirnov and I. A. Zobkalo 497 Search for magnetic fluctuations in superconducting $\text{La}_{1.83}\text{Sr}_{0.17}\text{CuO}_4$ by polarized neutron scattering
- L. Pierre, D. Morin, J. Schneck, J. C. Tolédano, J. Primot, C. Daguet, F. Glas, J. Etrillard and H. Savary 499 Formation conditions of the (2223) phase in lead-substituted superconducting ceramics Bi - Sr - Ca - Cu - O
- A. M. Kini, M. A. Beno, D. Son, H. H. Wang, K. D. Carlson, L. C. Porter, U. Welp, B. A. Vogt, J. M. Williams, D. Jung, M. Evain, M.-H. Whangbo, D. L. Overmyer and J. E. Schirber 503 $(\text{MDT-TTF})_2\text{AuI}_2$: an ambient pressure organic superconductor ($T_c = 4.5$ K) based on an unsymmetrical electron donor
- O. Eibl 509 Examination of the crystal structure of high- T_c $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$ by TEM
- O. Laborde, J. L. Tholence, P. Monceau, H. Noel, P. Gougeon, J. Padiou, J. C. Levet and M. Potel 513 Magnetic and resistive determinations of the upper critical field of $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ single crystals
- W. Q. Shen, H. S. Du, J. H. Li, M. L. Dong, X. X. Bai, J. X. Liu, J. L. Shen, G. G. Zheng, J. Q. Zheng and W. Y. Guan 517 DPAC study of quadrupole interaction in $\text{Y}_1\text{Ba}_2(\text{Cu}_{0.9}\text{Ag}_{0.1})_3\text{O}_{7-\delta}$
- Xia Sike and Ma Ruzhang 523 Structural variation of $\text{YBa}_2\text{Cu}_{2.88}\text{Fe}_{0.12}\text{O}_{7-x}$ oxide superconductor at low temperature
- S. Mazumdar 527 Dopant induced valence transition and fermion pairing in a model of superconducting copper oxides
- P. Fischer, J. Karpinski, E. Kaldis, E. Jilek and S. Rusiecki 531 High pressure preparation and neutron-diffraction study of the high T_c superconductor $\text{YBa}_2\text{Cu}_4\text{O}_{8+x}$
- Y. Horie and S. Mase 535 Discontinuity in sound velocity and high T_c superconductivity in $\text{YBa}_2\text{Cu}_3\text{O}_7$
- B. A. Richert and R. E. Allen 539 LaO/BaO/SrO oxygen (p)-metal (d) excitons as the mechanism of high-temperature superconductivity
- Han Guchang, Wang Yugui, Wang Jinsong, Wang Nanlin and Jiao Xinping 543 Magnetic properties of (Bi · Pb) - Sr - Ca - Cu - O superconductors
- H. Niki, T. Suzuki, S. Tomiyoshi, H. Hentona, M. Omori, T. Kajitani, T. Kamiyama and R. Igei 547 Proton NMR in hydrogen-doped superconductor $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}\text{H}_{0.2}$
- A. D. Wieck, E. Batke, U. Merkt, D. Walker and A. Gold 553 Evidence for two electronic gaps in polycrystalline $\text{Y}_1\text{Ba}_2\text{Cu}_3\text{O}_7$ -type compounds

General Papers (contd)

- E. M. Haines 561 Self-consistent moments and short-range magnetic order in Ni
- A. I. Ekimov, Al. L. Efros, M. G. Ivanov, A. A. Onushchenko and S. K. Shumilov 565 Donor-like exciton in zero-dimension semiconductor structures
- E. Czarnecka-Such, A. Rodzik, A. Kisiel, G. Dalba and P. Fornasini 569 Reflectivity spectra analysis of the $\text{Sb}_{40}\text{S}_{60}$ and $\text{Sb}_{28}\text{S}_{72}$ non-crystalline thin films
- W. C. de Oliveira and E. V. Anda 575 The effect of non-orthogonality and screening on the impurity band of doped semiconductors

- | | | |
|----------------------------|-----|--|
| H. Gollisch and R. Feder | 579 | Electronic structure and magnetism of Fe ₃ Pt near the Curie temperature |
| J. M. Lopez and M. Silbert | 585 | Structural diffusion model calculations of the pair distribution function of aluminium: from the liquid to the amorphous phase |

A cumulative Author Index appears in Numbers 4, 8 and 12 of each Volume

FEBRUARY

VOLUME 69, NUMBER 6

1989

CONTENTS

General Papers

- | | | |
|--|-----|--|
| S. S. Lin, Y. S. Huang, C. R. Huang and M. C. Lee | 589 | Raman investigation of RuS ₂ |
| Zhihua Yan, Wenkui Wang, Jingfeng Li and Yuming Wang | 595 | Formation of amorphous Fe ₅₀ Si ₅₀ alloy by diffusion reaction |

Superconductors and Superconductivity

- | | | |
|--|-----|--|
| R. Retoux, C. Michel, M. Hervieu, N. Nguyen and B. Raveau | 599 | Bi ₂ Sr ₄ Fe ₃ O _{12-δ} , a bismuth iron oxide isostructural with the "2223" superconductor |
| V. I. Ilyichev, M. A. Savchenko and A. V. Stefanovich | 605 | High-temperature superconductivity of ceramic systems |
| Yu. N. Shvachko, D. Z. Khusainov, A. A. Romanyukha and V. V. Ustinov | 611 | Hysteresis of microwave absorption of hard superconductors in magnetic field |
| N. J. Wu, K. Xie, L. H. Zhao, Y. Zhou, D. W. Hu, Z. Y. Ran and Z. X. Zhao | 615 | Photoemission studies of high- <i>T_c</i> superconductor Ba ₂ Y _{1-x} Pr _x Cu ₃ O _{7+δ} |
| M. P. Fontana, C. Paracchini, C. Paris De Renzi, P. Podini, F. Licci and F. C. Maticotta | 621 | Temperature dependence of resistivity in YBa ₂ Cu ₃ O _{7-δ} : study of the effect of oxygen content and of paraconductivity |
| J. E. Gordon, M. L. Tan, R. A. Fisher and N. E. Phillips | 625 | Specific heat data of high- <i>T_c</i> superconductors: lattice and electronic contributions |
| W. R. Flavell and R. G. Egdell | 631 | Observation of electronic Raman scattering in Y ₂ BaCuO ₅ |

General Papers (contd)

- | | | |
|--|-----|---|
| J. González Hernández and R. Tsu | 637 | Determination of film-substrate microadhesion for crystalline silicon films by Raman scattering |
| Ching Zhou and Chang-de Gong | 641 | Surface excitations in anisotropic magnetic superlattices—surface polaritons and spin waves |
| B. Stepień, C. Jedrzejek and R. E. Allen | 647 | Dangling-bond resonances and intrinsic Schottky barriers |
| S. V. Nistor | 651 | Localisation of the neutral impurity atom in the <i>M</i> ⁰ (1) (<i>M</i> = Ga, In, Tl) laser active center |
| H.-M. Kagaya, H. Kotoku and T. Soma | 655 | Lattice vibrational contribution to equation of state for tetrahedral compounds |
| A. A. Kosyachkov and V. T. Cherepin | 659 | Energy effects in secondary ion emission of implanted and simultaneously sputtered argon |

- | | |
|---|---|
| E. L. Ivchenko, Yu. B. Lyanda-Geller and
G. E. Pikus | 663 Circular magnetophotocurrent and spin splitting of band
states in optically-inactive crystals |
| H. Dandache | 667 On the interrelationships between Gruneisen's parameter,
shock and isothermal equation of state |
| R. Girlanda, G. Martino, G. Mondio,
P. Perillo and R. Giorgi | 671 XPS and Auger spectra of <i>N</i> -methyl 2,3-diphenyl 5-methyl
indole (C ₂₂ H ₁₉ N) |
| S. Yarlagadda and G. F. Giuliani | 677 Quasiparticle energy and interaction in a normal electron
liquid |
| Rui-qin Zhang | 681 Origin and nature of gap states in <i>a</i> -Si : H alloys |
| D. Mihalache, D. Mazilu and Ruo-Peng Wang | 685 Transverse magnetic polarized nonlinear surface-guided waves
in semi-infinite superlattices: the transfer matrix technique |
| G. K. Wertheim and D. N. E. Buchanan | 689 Crystal field splitting of core levels in β -Sn |
| K. T. Ramakrishna Reddy and
P. Jayarama Reddy | 693 Photoconductive response of laser evaporated CuGaSe ₂ films |
| T. Kaneyoshi | 695 A new disordered phase and its physical contents of a mixed
Ising system with a random crystal field |
| M. Kroeker and U. Merkt | 699 Conductivity of inversion layers on InSb in parallel magnetic
fields |
| A. M. Jayannavar | 703 Effect of an electric field on the mobility edge |
| J. J. del Val, J. Colmenero and C. Lacabanne | 707 Compensation laws and phase segregation in polymer blends |
| A. Bouhelal and J. P. Albert | 713 A configuration interaction study of multiplets in ZnS:Ni |

A cumulative Author Index appears in Numbers 4, 8 and 12 of each Volume

FEBRUARY

VOLUME 69, NUMBER 7

1989

CONTENTS

General Papers

- | | |
|---|--|
| B. Williamson, M. Gilmartin, G. Lifante,
F. Jaque, B. Henderson and F. Cusso | 717 Luminescence of (F ₂ ⁺) _H centres in NaCl:O ₂ under high
intensity F-band excitation |
| D. Moses | 721 Charge quantum yield and transient transport properties of
anthracene and amorphous selenium |
| G. Bernier, J. Beerens, J. De Boeck,
K. Deneffe, C. van Hoof and G. Borghs | 727 Photoconductivity and photoluminescence of GaAs grown on
Si by molecular beam epitaxy |
| N. Malinowski, H. Schaber, T. Bergmann and
T. P. Martin | 733 Electronic shell structure in Na - O clusters |

Superconductors and Superconductivity

- | | |
|---|---|
| J. Darriet, A. Le Lirzin, E. Marquestaut,
B. Lepine, B. Chevalier and J. Etourneau | 739 New series of compounds Bi ₂ ALaCuO _{6.5} (A = Ca, Sr or Ba)
isostructural to the superconducting phase Bi ₂ Sr ₂ CuO ₆ |
|---|---|

- V. N. Denisov, B. N. Mavrin,
V. B. Podobedov, V. N. Bagratashvily,
V. N. Burimov, V. B. Ginodman,
L. N. Zherikhina, A. N. Zherikhin,
M. M. Rodin, A. P. Sviridov, S. I. Tsypina
and A. M. Tskhovrebov
- V. A. Moskalenko, M. E. Palistrant,
V. M. Vackaluk and I. V. Padure
- General Papers (contd)**
- L. Artus, J. Pascual,
A. Goullet and J. Camassel
- D. G. Seiler, M. R. Loloee, S. A. Milazzo,
A. J. Durkin and C. L. Littler
- M. I. Auslender and N. G. Bebenin
- H. L. Park, H. K. Kim, C. H. Chung,
S. K. Chang and Jiang-Tsu Yu
- A. Seidel, C. A. Majid and G. Linker
- M. Sommer, K. Mui and F. W. Smith
- J. T. T. Kumaran and C. Bansal
- N. Ohno, S. Hashimoto and M. Itoh
- Yu V. Korostelin, P. V. Shapkin,
L. G. Suslina, A. G. Areshkin, L. S. Markov
and D. L. Fedorov
- Z. Kąkol, R. N. Pribble and J. M. Honig
- 743 Diagnostics of the high temperature superconducting
YBa₂Cu₃O_x films by Raman spectroscopy
- 747 The influence of oxygen disorder on high-*T_c* superconductivity
in two-band model
- 753 Polarized infrared spectra of AgGaSe₂
- 757 New laser-based magneto-optical studies of Hg_{1-x}Cd_xTe alloys
- 761 On the band structure and anisotropy of transport properties
of ferromagnetic semiconductors CdCr₂Se₄ and HgCr₂Se₄
- 765 Valence state of europium in CaS:Eu phosphor
- 769 Formation mechanisms of amorphous clusters in Mn⁺
implanted thin Al films
- 775 Thermodynamic analysis of the chemical vapor deposition of
diamond films
- 779 A Mössbauer effect investigation of Fe hyperfine fields in
Fe_{3-x}Mn_xSi alloys
- 785 Observation of longitudinal excitons in uniaxially-strained
RbI and KI crystals
- 789 Localized exciton luminescence in Zn_xCd_{1-x}Se solid solutions
- 793 Magnetocrystalline anisotropy of Fe_{3(1-δ)}O₄, 0 ≤ δ < 0.01

A cumulative Author Index appears in Numbers 4, 8 and 12 of each Volume

FEBRUARY

VOLUME 69, NUMBER 8

1989

CONTENTS

General Papers

- W. Figueiredo and J. A. Plascak
- R. Krishnan and H. Lassri
- J. C. van den Heuvel, R. C. van Oort and
M. J. Geerts
- Y. Takagaki, K. Gamo, S. Namba,
S. Takaoka, K. Murase, S. Ishida,
K. Ishibashi and Y. Aoyagi
- 797 Critical properties of two-component spin-1/2 ferromagnetic
superlattices
- 803 High field magnetization studies in amorphous Co-Er-B
alloys
- 807 Diffusion length measurements of thin amorphous silicon
layers
- 811 Nonlocal voltage fluctuations in a quasi ballistic electron
waveguide

- N. Frangis, S. Kuypers, C. Manolikas,
J. Van Landuyt and S. Amelinckx
- F. W. Wise and C. L. Tang
-
- Superconductors and Superconductivity**
- X. Z. Wang, K. Donnelly, T. Bakas,
J. M. D. Coey, I. Rosenman and C. Simon
- X.-D. Xiang, M. Chung, J. W. Brill, S. Hoen,
P. Pinsukanjana and A. Zettl
- T. A. Costi
- D. Schweitzer, S. Gärtner, H. Grimm, E. Gogu
and H. J. Keller
- A. K. Rajagopal, S. D. Mahanti and W. Jin
- M. Sera, Y. Ando, S. Kondoh, K. Fukuda,
M. Sato, I. Watanabe, S. Nakashima and
K. Kumagai
- C. Thomsen, M. Cardona, R. Liu,
Hj. Mattausch, W. König, F. García-Alvarado,
B. Suárez, E. Morán and M. Alario-Franco
- Liu Hongbao, Cao Liezhao, Zhou Ling,
Mao Zhiqiang, Li Xiaoxian, Yu Zhidong,
Xue Bai, Mao Xianglei, Zhou Guen,
Run Yaozhong, Chen Zhaojia and
Zhang Yuheng
- 817 Continuous series of one-dimensional structures in the compounds $\text{Bi}_{2+x}\text{Se}_3$, $\text{Bi}_{2+x}\text{Te}_3$, $\text{Sb}_{2+x}\text{Te}_3$, $(\text{Bi}_2\text{Te}_3)_n\text{GeTe}$ and $(\text{Sb}_2\text{Te}_3)_n\text{GeTe}$
- 821 Subpicosecond luminescence study of hot-electron relaxation in GaAs quantum wells
- 829 Production and characterisation of single crystal, superconducting $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_x$
- 833 Elastic properties of single crystal $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_8$
- 837 Pairing correlations and susceptibilities of the one-dimensional Hubbard model
- 843 Superconductivity in polycrystalline pressed samples of organic metals
- 847 Neutron scattering as a probe of superconducting correlations in the new high T_c superconductors
- 851 Transport and magnetic anomalies at the structural transition to the new low temperature phase in $\text{La}_{2-x}\text{Ba}_x\text{CuO}_4$
- 857 $\text{Pb}_2\text{Sr}_2\text{R}_{1-x}\text{Ca}_x\text{Cu}_3\text{O}_{8+d}$: Raman and far infrared investigation
- 867 Zero resistance at 132K in the multiphase system of $\text{Bi}_{1.9-x}\text{Pb}_x\text{Sb}_{0.1}\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_y$ with $x=0.3, 0.4$

i Author Index Nos 1-8

A cumulative Author Index appears in Numbers 4, 8 and 12 of each Volume

MARCH

VOLUME 69, NUMBER 9

1989

CONTENTS

General Papers

- T. Ito, A. Taguchi and T. Ohno
- Young-Sea Huang and V. Murgai
- V. V. Aleksandrov, T. S. Velichkina,
V. I. Voronkova, L. V. Koltsova,
I. A. Yakovlev and V. K. Yanovskii
- S. Magazu', G. Maisano, D. Majolino,
F. Mallamace, F. Aliotta and N. Micali
- M. Rinker, H.-E. Swoboda, F. A. Majumder
and C. Klingshirn
- 869 Band structures of Ga-Ge-As-Ge and In-Ge-As-Ge superlattices
- 873 Photoemission study of Cu-Yb thin films
- 877 Elastic coefficients of KTiOPO_4 , RbTiOPO_4 , TlTiOPO_4 crystals determined from Mandelstamm-Brillouin light scattering spectra
- 883 Evidence of large cluster aggregates in potassium oleate microemulsion by elastic light scattering measurements
- 887 Diffusive and thermal properties of the electron-hole plasma in CdS and CdSe

- | | |
|---|--|
| U. Frank, A. Brandl and W. Prettl | 891 Far-infrared radiation controlled chaos in <i>n</i> -GaAs |
| U. Schneider and B. Schröder | 895 A semiquantitative model for the creation kinetics of metastable defects in <i>a</i> -Si:H by keV-electron irradiation |
| E. Friess, H. Brugger, K. Eberl, G. Krötz and G. Abstreiter | 899 Confined optical modes in short period (110) Si/Ge superlattices |
-
- Superconductors and Superconductivity**
- | | |
|---|---|
| F. Chibane, N. Bonnel de Longchamp, R. Martin, J. Perrière, G. Hauchecorne, F. Kerhervé and J. P. Maneval | 907 Optical pulse detection by BiSrCaCuO granular films |
| H. D. Jostarndt, M. Galffy, A. Freimuth and D. Wohlleben | 911 Unstable high temperature superconductivity and martensitic effects in YBaCuO |
| B. H. Brandow | 915 Valence fluctuations with finite U: a mechanism for high-temperature superconductivity |
| I. T. Belash, A. D. Bronnikov, O. V. Zharikov and A. V. Pal'nichenko | 921 Superconductivity of graphite intercalation compound with lithium C ₂ Li |
| D. S. McLachlan | 925 Morphology dependence of the resistivity and Meissner curves in two-phase superconductors |
-
- General Papers (contd)**
- | | |
|---|--|
| T. Ishihara, J. Takahashi and T. Goto | 933 Exciton state in two-dimensional perovskite semiconductor (C ₁₀ H ₂₁ NH ₃) ₂ PbI ₄ |
| V. M. Shatalov and O. F. Panchenko | 937 Effect of electron band structure on energy distribution of secondaries in silicon |
| A. W. Sheikh | 941 Specific heat of NM – TM spin glasses |
| Zhang Yu-Xin, Du Mao-Lu and Li Yong-Tai | 945 A theoretical approach of pressure dependence of zero-field splitting of Cr ³⁺ ion in ammonium aluminum alum |

A cumulative Author Index appears in Numbers 4, 8 and 12 of each Volume

MARCH

VOLUME 69, NUMBER 10

1989

CONTENTS

General Papers

- | | |
|---|---|
| | i Editorial—Congratulations to Manuel Cardona |
| M. Raghu, S. V. Subramanyam and S. Chatterjee | 949 Pressure induced incommensurate to commensurate transition in K ₃ Cu ₈ S ₆ |
| V. Fiorentini and A. Baldereschi | 953 Interpretation of double acceptor spectra in Ge |
| T. Hayashi and M. Watanabe | 959 Surface evanescent layer for an exciton polariton of PbI ₂ estimated from the analysis of reflection spectra |
| C. Dufour, A. Bruson, B. George, G. Marchal, Ph. Mangin, C. Vettier, J. J. Rhyne and R. Erwin | 963 Polarized neutron study of Fe/Si multilayers |
| J. Holm and K. Schönhammer | 969 Generalized slave – boson treatment of double occupancy of the <i>f</i> -orbital in the single impurity Anderson model |

Y. M. Kim, G. Mihály and G. Grüner

975 Onset of the charge-density wave conduction at low temperatures in $K_{0.3}MoO_3$ **Superconductors and Superconductivity**

Zhou Xianyi, Liu Zhiguo, Zhu Yuping, Chen Guanghui, Chen Yong, Zhang Qirui and Guan Weiyan

981 Experimental verification of superconducting phase separation model in metallic glass $Zr_{78}Co_{22}$

J. E. Hirsch and S. Tang

987 Hole superconductivity in oxides

T. Onogi, T. Ichiguchi and T. Aida

991 Power-law dissipative behavior in high- T_c superconductor

W. Urland and F. Tietz

995 Dependence of T_c on hole concentration in $Bi_2Sr_{3-x}Ca_xCu_2O_{8+d}$ superconductors

M. Avignon and K. H. Bennemann

999 On the role of holes in the p-d anti-bonding band of CuO_2 planes for high- T_c -superconductivity**General Papers (contd)**

E. Gratz, E. Bauer, H. Nowotny, A. T. Burkov and M. V. Vedernikov

1007 Temperature dependence of the electrical resistivity of $REFe_2$ compounds

A cumulative Author Index appears in Numbers 4, 8 and 12 of each Volume

MARCH

VOLUME 69, NUMBER 11

1989

CONTENTS**General Papers**

Zhao Zhibo, Xia Sike, Ma Ruzhang, Ping Jueyun, Miao Baihe and Pan Shuming

1011 The orientation anomaly in EDPs of the $Nd_{1+x}Fe_4B_4$ compound

D. Chauveau, C. Guillot, B. Villette, J. Lecante, M. C. Desjonquères, D. Sébilleau, D. Spanjaard and G. Trégia

1015 Photoelectron diffraction study of the unreconstructed and the hydrogen reconstructed W(110) surfaces

C. Hirlimann, J.-F. Morhange and A. Chevy

1019 Excitonic resonant second harmonic in GaSe

A. Jezierski

1023 Density of states in $Ni_{80}B_{20(1-x)}P_{20x}$ amorphous alloys

M. Ribault and J. Joffrin

1031 Magnetoresistance effects in single crystal La_2CuO_{4-y}

A. Testa, W. Czaja, A. Quattropani and P. Schwendimann

1035 Screening effects in highly concentrated bound excitons in semiconductors

Songhua Chen and D. C. Ailion

1041 ^{35}Cl NQR spin-lattice relaxation study and phason gap determination in the incommensurate system Rb_2ZnCl_4

H. J. M. Swagten, F. A. Arnouts, A. Twardowski, W. J. M. de Jonge and A. Mycielski

1047 Magnetic specific heat of the diluted magnetic semiconductor $Hg_{1-x}Fe_xSe$

E. P. Skipetrov

1053 Metal-insulator transition induced by electron irradiation in $n-Pb_{1-x}Sn_xSe$ ($x = 0.25$) alloy

Ji-Wei Wu

1057 Binding energies of Wannier excitons in semiconductor quantum wells: numerical integration of the in-plane radial equation

Superconductors and Superconductivity

- C. E. Hamrin, Jr., W. D. Arnett, R. J. De Angelis, X. X. Ding and W. D. Ehmann 1063 Starting materials and superconductor stoichiometry
- Su Zhen-peng, Zhao Yong, Sun Shi-fang, Chen Zu-yao, Chen Xian-hui and Zhang Qi-rui 1067 Effects of Ag doping on the critical current density of $\text{YBa}_2\text{Cu}_3\text{O}_{7-y}$
- X. Granados, M. Carrera, J. Fontcuberta, M. Vallet and J. M. González-Calbet 1073 On the effects of helium absorption on the superconducting onset of $\text{YBa}_2\text{Cu}_3\text{O}_{7-y}$
- J. W. Chen and C. F. Chen 1079 Superconductivity in $(\text{Y}_{1-x}\text{M}_x)\text{Ba}_2\text{Cu}_3\text{O}_{7-d}$ ($\text{M} = \text{Cd}$ and Zn) systems
- B. Domengès, M. Hervieu and B. Raveau 1085 The 50K – superconductor $\text{TlBa}_2\text{CaCu}_2\text{O}_7$: HREM study
- J. Darriet, C. J. P. Soethout, B. Chevalier and J. Etourneau 1093 Superconducting phases in the series $\text{Bi}_2\text{Sr}_{2-x}\text{La}_x\text{CuO}_{6+d}$ ($0 < x < 1$)
- L. Forro, M. Raki, J. Y. Henry and C. Ayache 1097 Hall effect and thermoelectric power of an $\text{YBa}_2\text{Cu}_3\text{O}_{6.8}$ single crystal
- R. K. Nesbet 1103 Spin-flip pairing in CuO_2 superconductors

General Papers (contd)

- K. K. Tewari, S. D. Pandey and P. Chand 1109 Identification of Suzuki-phase in $\text{CsCl}:\text{Eu}^{2+}$, Mn^{2+} crystals
- A. Gordon 1113 Conductivity by ionic defects in hydrogen-bonded chains
- M. Kucera, J. Bok and K. Nitsch 1117 Faraday rotation and MCD in Ce doped YIG

A cumulative Author Index appears in Numbers 4, 8 and 12 of each Volume

MARCH

VOLUME 69, NUMBER 12

1989

CONTENTS**General Papers**

- K. A. Mäder, A. Baldereschi and H. von Känel 1123 Band structure and instability of $\text{Ge}_{1-x}\text{Sn}_x$ alloys
- H.-P. Werner, J. U. von Schütz, H. C. Wolf, R. K. Kremer, M. Gehrke, A. Aumüller, P. Erk and S. Hünig 1127 Spin-Peierls transition in (2,5-dichloro-N,N'-dicyanoquinone-diimine) $_2\text{N}(\text{CH}_3)_4$
- M.-H. Tsai, J. D. Dow, R. V. Kasowski, A. Wall and A. Franciosi 1131 Explanation of anomalous Curie constants of $\text{Cd}_{1-x}\text{Mn}_x\text{Te}$ alloys
- P. Baumgart, S. Blumenröder, A. Erle, B. Hillebrands, G. Güntherodt and H. Schmidt 1135 Sound velocities of $\text{YBa}_2\text{Cu}_3\text{O}_{7-d}$ single crystals measured by Brillouin spectroscopy
- T. W. Steiner, A. G. Steele, S. Charbonneau, M. L. W. Thewalt, E. S. Koteles and B. Elman 1139 Time-resolved studies of biexcitons in GaAs

Superconductors and Superconductivity

- Wang Ke-qin, Chen Zhao-jia, Xia Jian-sheng, Chen Zuyao and Zhang Qirui 1145 Two transitions in single crystal $\text{GdBa}_2\text{Cu}_3\text{O}_{7-y}$ near T_c
- V. A. Gasparov, R. Huguenin, D. Pavuna and J. van der Maas 1147 Radio frequency penetration depth in HTSC ceramic samples

- Y. Yamaguchi, S. Waki and M. Tokumoto 1153 Magnetic properties of tetragonal $\text{YBa}_2\text{Cu}_3\text{O}_{6+x}$: susceptibility with ferromagnetic Weiss-constant
- M. Pasternak and R. D. Taylor 1157 Quenching of magnetic fluctuations around ^{119}Sn impurities in superconducting $\text{GdBa}_2(\text{Cu}_{0.99}\text{Sn}_{0.01})_3\text{O}_7$
- M. Saint-Paul, J. L. Tholence, H. Noël, J. C. Levet, M. Potel and P. Gougeon 1161 Ultrasound study on $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ and $\text{GdBa}_2\text{Cu}_3\text{O}_{7-\delta}$ single crystals
- R. B. Tripathi, S. Singh, S. M. Khullar, B. S. Khurana, R. K. Kotnala, K. Jain, B. V. Reddi, R. C. Goel, K. C. Nagpal, S. Singhal and B. K. Das 1165 Non-superconducting phase stability in $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ compound
- T. Osada and N. Miura 1169 Edge states of anisotropic two-dimensional Bloch electron system under magnetic fields
- K. N. Shrivastava 1173 Theory of phonon-induced charge transfer and hybridization in high temperature superconductivity
- S. Kagoshima, Y. Nogami, M. Hasumi, H. Anzai, M. Tokumoto, G. Saito and N. Mori 1177 A change of the superstructure and an associated rise of the superconducting critical temperature in the organic superconductor $\beta\text{-(BEDT-FFT)}_2\text{I}_3$

General Papers (contd)

- A. Cantarero, C. Trallero-Giner and M. Cardona 1183 Excitons in one-phonon resonant Raman scattering: GaP
- Y. Luspin and G. Hauret 1187 Brillouin scattering in $(\text{NH}_4)_2\text{ZnCl}_4$ near the lock-in transition
- N. Sato, M. Mori, K. Ichikawa and T. Matsukawa 1191 Resonant photoemission in $\text{Ce}_2\text{Zn}_{17}$ with stable trivalent valence
- Hong-Suk Youn, Yong-Geun Kim, Hyung-Gon Kim, Wah-Tek Kim and Sook-Il Kwun 1195 Impurity optical absorption of SbSI:Ni single crystals
- J. C. Hansen, J. A. Benson, M. K. Wagner and J. G. Tobin 1197 The electronic structure of $2 \times 1\text{-Au}(1\ 1\ 0)$
- S. Pal, S. D. Pandey and P. Chand 1203 Electrical studies in some alkali titanates
- 1207 Author Index Nos 1-12

i Calendar of Solid State Events

A cumulative Author Index appears in Numbers 4, 8 and 12 of each Volume

